313 about 1 inch thick, 6 to 8 feet long, and 6 to 8 inches wide. Planks cut from timber with a heavy pitch content are said to last longer.

Beams are usually squared sections of red (heart) wood. They are used primarily for foundations and joists and are split out by wedges.

[438] An important product of Cherán is shakes, *tejamanil* (tasámani). The product is all exported, mostly to Zacapu. Some is also taken
[824] to Uruapan. Pine is rarely used for shakes, as the product curls during dry weather and is not as durable as shakes made from fir. However, fir shakes are more brittle. Fir trees grow only sporadically among the pine forests and must be searched for. Once a tree is found, the shake maker examines it carefully, studying the position of branches and estimating the probable straightness of the grain. If the tree does not look promising, it is left. Even after a tree has been felled with the ax, it may prove unsuitable for shakes. In this case it may be hewed into a beam, but it is more apt to be abandoned.

If the tree proves suitable, it is cut in lengths with saw or ax and the bark is removed, together with any rotten or insect-eaten portions. Each length is now split in sections (péri) with
[401] a wedge, *cuña* (injárukua). Each section has a width of four fingers at its outer edge, and a tree of average size will produce eight sections. One end of each section is then marked with a machete along the radii of the trunk. The section is first marked in the middle; each half is then divided in two, then each quarter, until 16 divisions are marked. At each mark the machete is driven in with blows of an oaken club to a depth of about 5 cm. The shakes are then split off with an oaken instrument called a *rajador* (uá,gua). (Pl. 3, lower right and left.)

The completed shakes are thin and wedge-shaped when viewed in cross section. After
[804] drying in the sun for 2 or 3 hours they are tied into bundles of 400 called an irépita (400 in Tarascan). They are transported and sold by the bundle, the price varying according to the
[438] length. Different villages and Mexican markets have preferences for different lengths, usually 4, 5, or 6 *cuartas*.[a]

[a] A cuarta equals ¼ of a vara (the standard measure of length, about 33 inches long).

[text continues on p. 19a]

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[P119a]

313 Cherán prefers shakes 5 *cuartas* in length,
304 called "thick shakes" (tasámani tiápiti).
438 Shakes of 4 *cuartas* (1 *vara*) are sold primarily in Uruapan and are spoken of as *de comercio*, or "small shakes" (tasámani sapírati). Shakes 6 *cuartas* long, preferred by some Tarascan towns, are called "long shakes" (tasámani iórati). In Angáhuan, shakes 5 *cuartas* long are sold in Zamora and are sometimes called Zamorana.

313 Shake makers usually work from 8 a. m. to 6 p. m. A week's work routine is as follows: On Tuesday suitable trees are sought and felled. Wednesday is devoted to cutting trees in sections. Thursday and Friday the timber is split into shakes. One day is spent drying the shakes in the sun, and, if the maker is a professional, the finished product is taken to Uruapan or Zamora on Saturday and Sunday for sale. On this schedule one person might make two bundles of 400 shakes (two irépitas) in a week.

313 Railroad ties are usually made under contract
439 arrangements. The workers leave town on
397 Tuesday, usually arriving in time to cut a week's supply of logs for splitting and shaping. Wednesday, Thursday, and Friday are spent in splitting and shaping the ties with the ax. Saturday the ties are checked by the contractor, and the men are paid in time to return home that night.

313 A minor industry is cutting out blocks of
322 madroña and jaboncilla wood. These are sold
438 in Paracho, where they are made into doors, spoons, wooden bowls, and the various small wooden objects for which Paracho is famous. A few people in Cherán also make broom handles.

314 A considerable amount of charcoal is produced on the more distant lands of Cherán. Several men in town make their living entirely from charcoal burning. Oak is used almost exclusively for charcoal. Charcoal burners usually spend from Monday until Friday in the woods, and return home over the week end. Charcoal is usually sold in the woods to dealers, the unit of sale being a stack 8 by 7 inches by 6 feet.

In a number of Tarascan towns turpentine production is an important industry. This has been true of Cherán in the past, but. for reasons not discoverable, output at present is

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241 when maize begins to do poorly in a field, with small stalks and poor ears, barley is often planted for 1 year. This "warms up" the soil and good corn crops are secured for a few years.

243 Maize lands are plowed twice, the first time in late summer or fall, the second in late winter, the furrows of the second plowing being made at right angles to those of the first. Planting takes place in the spring after danger of frost is past; on the plain this is as early as March, but at higher elevations it may be later.

Three men and two yokes of oxen are used in planting. One yoke of oxen draws a plow which opens a furrow. A man follows this furrow, dropping seed each step and pressing it down with his foot. Two grains are dropped unless worms are bad, when three or four may [804] be planted. Maize rows are about 1 *vara* (32 inches) apart. The second yoke of oxen draws a plow which makes a furrow between the planted rows, covering the seed to a depth of about 4 inches. To aid in covering the corn, the second plow has a wooden bow fastened horizontally below the beam behind the plow point. No digging stick is ever used except to replant fields damaged by worms, and all work [462] is done by men. There is no exchange of labor [476] or lending of tools or animals, even among relatives.

Several types of maize are grown. Trimásion is white with a somewhat larger grain and is sown in the "plains." It has more and larger stalks and ears. Tulukénio is yellow and has small grains. It is sown in the mountains about 8 to 15 days later, but matures at the same time as Trimásion. The ears are short, ordinarily about 4 inches in length, and the stalks are smaller. The fact that Tulukénio is always sown on poorer and colder lands probably accounts for most of the differences, although it is claimed that the differences persist when the two types are planted in the same fields. However, probably because of the methods of seed selection and the isolation of mountain fields, some regressive or primitive types occur in Tulukénio which may have genetic significance. Not enough Trimásion types have been studied to define the differences.

In the garden plots a black or dark-blue maize (ćirá$_{\eta}$ki) is planted. It appears to have some significant differences from Tulukénio,

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Recognition of the interrelations of various economic activities in different regions is not a new idea to the Tarascans. The economy of the region tends toward individual and local specialization with a consequent high development of trade. While undoubtedly the majority of the Tarascans are members of self-sufficient family groups so far as the bare necessities of existence are concerned, very large numbers are partly or wholly dependent upon employment, manufactures, or trade. Consequently, the internal economy of a Tarascan village not only is complex by primitive standards but also fits into tribal and extratribal patterns of even greater complexity. Quite apart from relations with the national economy of Mexico, and, through it, with international economy, large numbers of Tarascans have been traders and middlemen on a large scale. Not only have they carried local products from Tarascan village to Tarascan village, or outside the Tarascan area; they have bought goods in non-Tarascan areas to sell in other non-Tarascan areas. The study of Cherán economy, then, must be considered an incomplete picture of Tarascan economy just as the study of the economics of a single small town would inadequately describe the economics of the United States.

The following tabulation gives the units of measure used in Cherán.

CHERÁN UNITS OF MEASURE

Dry measure

1 *litro* = 1 liter, or 0.908 quart
1 *medida* = 5 *litros*
1 *fanega* = 20 *medidas*, or 100 *litros*, or 1 *hectalitro*

Weight[1]

1 *libra* = 1 pound
1 kilo = 2.2 libras
1 *arroba* = 11.5 kilos
1 *carga* = 161 kilos or 14 *arrobas*
1 burro load = ½ *carga* (approx.), 7 or 8 *arrobas*
1 mule load = 1 *carga* (approx.), 14 to 18 *arrobas*

Capacity

1 cuartillo = 1 pint or ½ liter
1 *litro* = 1 quart (approx.) or 1 liter
1 *decalitro* = 10 litros

Square measure

1 *hectarea* (hectare) = a piece of land about 10,000 sq. paces or 10,000 sq. m.

[1] The beam balance is widely used for determining weight.

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[p.596] Sierra Tarascans

Cubic measure (used in masonry)

804 1 *barra* = 1 yd. × 1 yd. × 16 in.
1 *metro* = 1 m. × 1 m. × 50 cm.

PRODUCTION

433 439 Production in Cherán depends more directly upon the land than it does in most other Tarascan villages. Although the land ultimately is the source of all Tarascan raw materials, some industries require relatively few of such materials. In some cases—for example, the straw hat industry—all the raw materials are imported from outside the Tarascan area. Even more numerous are instances where the raw materials are secured from some other Tarascan town.

While Cherán economy is primarily self-sufficient in character, it is less so than are most Indian economies of Mexico. Cherán does supply most of its own basic food and housing needs, but it does not supply its own clothing. Moreover, many foods every Cherán resident desires are not produced locally. Numerous Cherán families also depend on wages more than upon their own direct exploitation of the land or upon industry. Finally, Cherán produces many goods for export, although to a far less degree than neighboring Paracho.

LAND

423 Tarascan land is of three main types: farm, forest, and residential. To these might be added public roads, water courses, and mineral deposits. The latter are relatively unimportant. Public roads and trails of course serve communications and do not enter directly into production. Water courses are also mainly in the public domain. Virtually their only use is to supply drinking water for man and beast and for washing purposes. Public lands also supply the small requirements of sand, clay, and building stone.

All permanent farm lands are privately owned. The only exceptions are occasional temporary fields cleared from the forest on lands too steep for cultivation for more than a few years. On the farm lands the major products are white or yellow maize and wheat. Beans, squash, fruits, oats, and barley are produced only in small quantities.

423 hectares in size,[48] and may be used indefinitely by the recipient, provided they are not left untilled for more than two successive years. They may [428] be inherited by sons, daughters, or in-laws, and may be divided among them. A family head may sell the use rights of his land to another member of the community, but not to outsiders. The official title to lands is held by the pueblo.

Another remnant of communal holdings, common in all parts of Tarasca, is found in the woodland, which is considered common land.[49]

[TEXT Continues TOP of P. 336]

●[804]

[48] In most parts of Tarasca land is measured in terms of the quantity of grain used in planting. Thus, in La Cañada a plot of maize land may vary from 1 to 8 liters of maize in size. Approximately 2 liters of maize is necessary to plant 1 hectare. (The term "hectare," however, is unknown to most Tarascans.) Five liters of maize equal 1 *medida;* 100 liters of maize are equivalent to 1 *fanega* (one hundredweight), or one *yunta*, meaning the amount of land in which a team (*yunta*) of oxen can plant one *fanega* of maize in one season. In terms of wheat, 44 liters equal 1 *carga*, or from 1 to 1½ *yuntas*. The above equivalents are those used in Chilchota and Carapan. Similar land measurements are employed in the Sierra.

[49] This aboriginal custom parallels the ancient Spanish practice of reserving woodland as communal property.

TARASCAN ECONOMY

241 Tarascan economy is today, and was in pre-Conquest times, as diversified as that of any large Indian group in North America. Agriculture has always been the preeminent occupation of most of the Tarascan population. Formerly, a 226 significant part of the people were fishers (or farmers and fishers), living around the shores of Lakes Pátzcuaro and Zirahuén and the numerous lakes and marshes of the northern plateau; the modern fishers are limited chiefly to the islands within Lake Pátzcuaro. Moreover, hunting and 224 gathering, although now of small importance, is 222 still practiced throughout the area. Apart from 463 the food quest, two other occupations have characterized Tarascan economy since prehistoric days: handicrafts and trade. Many of the Tarascan [438] villages specialize in particular home industries, for which they are famed over a large area. Again, in prehistoric and modern times the Tarascan has been one of the more notable Indian traders, serving as commercial middleman between the *tierra fría* and *tierra caliente* to the south and west.

AGRICULTURAL SYSTEMS AND ASSOCIATED CROP TYPES

241 Tarascan agriculture involves a mixture of New and Old World plants and cultivation practices. 177 The native trilogy—maize, beans, and squash—

[TEXT Continues bottom P. 336]